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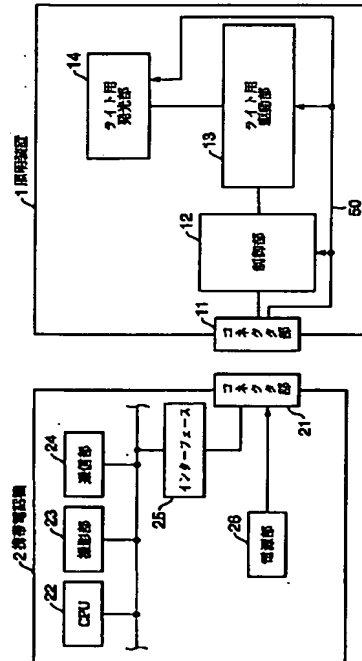
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(54) 【発明の名称】 照明装置

(57) 【要約】

【課題】 携帯端末に着脱自在に取り付けて動画像撮影時の撮影範囲を照明すること。

【解決手段】 携帯端末のコネクタに照明装置のコネクタを接続して照明装置を携帯端末に装着すると、携帯端末から電源の供給を受けて動作可能状態になる。その後、携帯端末から発光用の制御信号が入力されると、この制御信号に従って発光することにより、撮影範囲を照明する。



【特許請求の範囲】

【請求項 1】 撮影機能を有する携帯端末の撮影時に撮影範囲を照明する照明装置において、
発光して前記撮影範囲を照明する発光手段と、
前記発光手段の発光及び発光停止を制御する制御手段と、
前記携帯端末から前記発光手段を制御するための制御信号を前記制御手段に入力する入力手段と、
前記携帯端末から当該照明装置を動作させるための電源を受電する受電手段と、 当該照明装置を前記携帯端末に着脱自在に装着するための装着手段と、
を具備することを特徴とする照明装置。

【請求項 2】 前記入力手段と前記受電手段はコネクタで、このコネクタが前記携帯端末側のコネクタに接続することにより、これらコネクタを介して前記制御装置に前記制御信号が入力されると共に、前記電源が当該照明装置により受電され、更に、前記両コネクタは前記装着手段を兼ねていることを特徴とする請求項 1 に記載の照明装置。

【請求項 3】 撮影機能を有する携帯端末の撮影時に撮影範囲を照明する照明装置において、
発光して前記撮影範囲を照明する発光手段と、
前記発光手段の発光及び発光停止を制御する制御手段と、
前記携帯端末から前記発光手段を制御するための制御信号を受信して前記制御手段に入力する近距離通信手段と、
前記携帯端末から当該照明装置を動作させるための電源を受電する受電手段と、 当該照明装置を前記携帯端末に着脱自在に装着するための装着手段と、
を具備することを特徴とする照明装置。

【請求項 4】 前記受電手段はコネクタで、このコネクタが前記携帯端末側のコネクタに接続することにより、これらコネクタを介して前記電源が当該照明装置により受電され、更に、前記両コネクタは前記装着手段を兼ねていることを特徴とする請求項 3 に記載の照明装置。

【請求項 5】 撮影機能を有する携帯端末の撮影時に撮影範囲を照明する照明装置において、
発光して前記撮影範囲を照明する発光手段と、
前記発光手段の発光及び発光停止を制御する制御手段と、
前記携帯端末から前記発光手段を制御するための制御信号を前記制御手段に入力する入力手段と、
当該照明装置を動作させるための電源手段と、
当該照明装置を前記携帯端末に着脱自在に装着するための装着手段と、
を具備することを特徴とする照明装置。

【請求項 6】 前記入力手段はコネクタで、このコネクタが前記携帯端末側のコネクタに接続することにより、これらコネクタを介して前記制御装置に前記制御信号が

入力され、前記両コネクタは前記装着手段を兼ねていることを特徴とする請求項 5 に記載の照明装置。

【請求項 7】 撮影機能を有する携帯端末の撮影時に撮影範囲を照明する照明装置において、
発光して前記撮影範囲を照明する発光手段と、
前記発光手段の発光及び発光停止を制御する制御手段と、
前記携帯端末から前記発光手段を制御するための制御信号を受信して前記制御手段に入力する近距離通信手段と、
当該照明装置を動作させるための電源手段と、
当該照明装置を前記携帯端末に着脱自在に装着するための装着手段と、
を具備することを特徴とする照明装置。

【請求項 8】 前記発光手段は、動画撮影用のライトとして前記撮影範囲を照明する機能と、静止画撮影用のストロボとして前記撮影範囲を照明する機能を有し、それに伴って、前記制御手段は前記発光手段がライトとして動作する際の制御とストロボとして動作する際の制御を前記携帯端末からの制御信号により切り分けて行うことを特徴とする請求項 1 乃至 7 いずれかに記載の照明装置。

【請求項 9】 前記発光手段は複数の発光素子で構成されていることを特徴とする請求項 1 乃至 8 いずれかに記載の照明装置。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】本発明は、撮影機能を有する携帯端末に係り、特に携帯電話機で動画を撮影する場合に使用する撮影用の照明装置に関する。

【0002】

【従来の技術】従来、撮影機能を持った携帯端末として携帯電話機等があるが、専用の撮影用照明器具を持っていないのが通例である。唯一の例として、この種の携帯電話機で専用のストロボを持ったものがあるだけである。現在の携帯電話機は静止画を撮影し、これを転送するものであるが、今後、通信速度がますます速くなる趨勢にあり、動画の撮影機能を盛り込んで、動画像も転送できる機種の開発も進展している状況にある。

【0003】

【発明が解決しようとする課題】このような動画の撮影機能を有する携帯端末で、照度の足りない場所を撮影する時には撮影範囲を照明するライトが必要であるが、現在のところ携帯端末専用のライトを装備したものはないのが現状である。

【0004】本発明は、上述の如き従来の課題を解決するためになされたもので、その目的は、携帯端末に着脱自在に取り付けて撮影範囲を連続照明することができる照明装置を提供することである。

【0005】

【課題を解決するための手段】本発明の課題を解決する請求項1の発明は、撮影機能を有する携帯端末の撮影時に撮影範囲を照明する照明装置において、発光して前記撮影範囲を照明する発光手段と、前記発光手段の発光及び発光停止を制御する制御手段と、前記携帯端末から前記発光手段を制御するための制御信号を前記制御手段に入力する入力手段と、前記携帯端末から当該照明装置を動作させるための電源を受電する受電手段と、当該照明装置を前記携帯端末に着脱自在に装着するための装着手段とを具備することを特徴とする。

【0006】上記発明によれば、前記携帯端末に当該照明装置を装着すると、前記携帯端末から電源を受電して動作可能状態になり、その後、前記携帯端末から制御信号を入力すると、この制御信号に基づいて前記発光手段を発光して前記撮影範囲を連続的に照明する。

【0007】請求項2の発明は、前記請求項1において、前記入力手段と前記受電手段はコネクタで、このコネクタが前記携帯端末側のコネクタに接続することにより、これらコネクタを介して前記制御装置に前記制御信号が入力されると共に、前記電源が当該照明装置により受電され、更に、前記両コネクタは前記装着手段を兼ねていることを特徴とする。

【0008】請求項3の発明は、撮影機能を有する携帯端末の撮影時に撮影範囲を照明する照明装置において、発光して前記撮影範囲を照明する発光手段と、前記発光手段の発光及び発光停止を制御する制御手段と、前記携帯端末から前記発光手段を制御するための制御信号を受信して前記制御手段に入力する近距離通信手段と、前記携帯端末から当該照明装置を動作させるための電源を受電する受電手段と、当該照明装置を前記携帯端末に着脱自在に装着するための装着手段とを具備することを特徴とする。

【0009】上記発明によれば、発光手段の発光及び発光停止を制御する制御信号を携帯電話機からBluetoothのような近距離無線通信で受信して照明装置内に入力する。

【0010】請求項4の発明は、前記請求項3において、前記受電手段はコネクタで、このコネクタが前記携帯端末側のコネクタに接続することにより、これらコネクタを介して前記電源が当該照明装置により受電され、更に、前記両コネクタは前記装着手段を兼ねていることを特徴とする。

【0011】請求項5の発明は、撮影機能を有する携帯端末の撮影時に撮影範囲を照明する照明装置において、発光して前記撮影範囲を照明する発光手段と、前記発光手段の発光及び発光停止を制御する制御手段と、前記携帯端末から前記発光手段を制御するための制御信号を前記制御手段に入力する入力手段と、当該照明装置を動作させるための電源手段と、当該照明装置を前記携帯端末に着脱自在に装着するための装着手段とを具備すること

を特徴とする。

【0012】請求項6の発明は、前記請求項5において、前記入力手段はコネクタで、このコネクタが前記携帯端末側のコネクタに接続することにより、これらコネクタを介して前記制御装置に前記制御信号が入力され、前記両コネクタは前記装着手段を兼ねていることを特徴とする。

【0013】請求項7の発明は、撮影機能を有する携帯端末の撮影時に撮影範囲を照明する照明装置において、発光して前記撮影範囲を照明する発光手段と、前記発光手段の発光及び発光停止を制御する制御手段と、前記携帯端末から前記発光手段を制御するための制御信号を受信して前記制御手段に入力する近距離通信手段と、当該照明装置を動作させるための電源手段と、当該照明装置を前記携帯端末に着脱自在に装着するための装着手段とを具備することを特徴とする。

【0014】上記発明によれば、発光手段の発光及び発光停止を制御する制御信号を携帯電話機からBluetoothのような近距離無線通信で受信し、電源は自装置に内蔵されているものから供給される。

【0015】請求項8の発明は、前記請求項1乃至7いづれかにおいて、前記発光手段は、動画撮影用のライトとして前記撮影範囲を照明する機能と、静止画撮影用のストロボとして前記撮影範囲を照明する機能を有し、それに伴って、前記制御手段は前記発光手段がライトとして動作する際の制御とストロボとして動作する際の制御を前記携帯端末からの制御信号により切り分けて行うことを特徴とする。

【0016】請求項9の発明は、前記請求項1乃至8いづれかにおいて、前記発光手段は複数の発光素子で構成されていることを特徴とする。

【0017】

【発明の実施の形態】以下、本発明の実施の形態を図面に基いて説明する。図1は、本発明の第1の実施の形態に係る照明装置の構成例を示したブロック図である。照明装置1は携帯電話機2と着脱自在に接続するコネクタ部11、装置の発光動作等の個別制御及び装置全体の制御を司る制御部12、ライト用発光部14を駆動して発光させるライト用駆動部13、複数のLED（発光素子）等を発光して周囲を照明するライト用発光部14を有している。尚、コネクタ部11は携帯電話機2のコネクタ部21と接続して、制御データの送受及び携帯電話機2の電源部から電源を受電する機能を有している。

【0018】携帯電話機2は照明装置1と着脱自在に接続するコネクタ部21、通信制御や撮影制御等の個別制御及び装置全体の制御を行うCPU22、動画や静止画を撮影する撮影部23、電話通信やデータ通信を行う通信部24、照明装置1を接続するためのインターフェース25、装置に動作電源を供給する電池等の電源部26を有している。

【0019】図2は上記した照明装置1と携帯電話機2の斜視図である。照明装置1のコネクタ部11が携帯電話機2の電源端子部に配置されているコネクタ部21に接続されて、照明装置1が携帯電話機2に装着されるようになっている。携帯電話機2の231は受話用スピーカであり、27はLCD等の表示部である。尚、照明装置1のライト用発光部14があるヘッド部分は360度回転自在で、ライト用発光部14を任意の方向に向けることができるものとする。

【0020】次に本実施の形態の動作について説明する。まず、携帯電話機2の撮影機能を用いて例えば動画撮影を行う場合で、被写体の照度が足りない場合、照明装置1のコネクタ部11と携帯電話機2のコネクタ部21を接続して装着する。これにより、携帯電話機2の電源部26からコネクタ部21、コネクタ部11及び電源線50を通して照明装置1の各部に電源が供給されて動作可能状態になる。その後、携帯電話機2の撮影部23により撮影を開始する際に、CPU22からインターフェース25、コネクタ部21、コネクタ部11を通して制御部12に撮影開始指令と共に、露光情報などが入力される。制御部12は撮影開始指令が入力されると、ライト用駆動部13を制御して、ライト用発光部14を適正露光が得られるような明るさで発光させて、撮影範囲を連続照明する。

【0021】本実施の形態によれば、携帯電話機2に着脱自在に装着でき、携帯電話機2側から電源の供給を受け且つ携帯電話機2の撮影機能に連動して連続発光する構成のため、携帯電話機2の大きさに合わせて小形軽量とすることができ、暗い場所での携帯電話機2による動画の撮影に極めて便利に使用することができる。また、小形軽量のため、邪魔になることがなく携帯電話機2と一緒に持ち運びすることができ、手軽に動画の撮影時の照明ライトとして使用することができる。更に、ライト用発光部14として白色のLEDを用いることにより、耐久性を向上させ且つ、省電力とすることができ、長時間の撮影を行うことができる。

【0022】尚、照明装置1側に電池等の電源部を搭載すれば、コネクタ部11、21は制御信号の送受のみの機能とすることができ、その分、携帯電話機2側に設けられるコネクタ部21の配置及び設計の自由度を向上させることができる。

【0023】図3は、本発明の第2の実施の形態に係る照明装置の構成例を示したブロック図である。但し、図1に示した第1の実施の形態と同様の部分には同一符号を付し、適宜その説明を省略する。本例の照明装置1は、例えばBluetoothのような近距離通信部15を備えており、ライト用発光部14に関わる制御信号の携帯電話機2との送受はこの近距離通信部15を用いて行う構成になっている。従って、コネクタ部11は照明装置1を携帯電話機2に機械的に接続することと、携帯電

話機2から電源を受電する機能のみを持つことになる。上記構成以外の他の構成は図1に示した第1の実施の形態と同様である。また、携帯電話機2側も前記制御信号の通信のための近距離通信部29を装備している。

【0024】次に本実施の形態の動作について説明する。照明装置1のコネクタ部11と携帯電話機2のコネクタ部21を接続して装着する。これにより、携帯電話機2の電源部26からコネクタ部21、コネクタ部11及び電源線50を通して照明装置1の各部に電源が供給されて動作可能状態になる。その後、携帯電話機2の撮影部23により撮影を開始する際に、CPU22から近距離通信部29、近距離無線回線、近距離通信部15を通して制御部12に撮影開始指令と共に、露光情報などが入力される。制御部12は撮影開始指令が入力されると、ライト用駆動部13を制御して、ライト用発光部14を適正露光が得られるような明るさで連続発光させて、撮影範囲を照明する。

【0025】本実施の形態によれば、携帯電話機2との制御信号の送受は近距離通信部15、29を介して行うため、コネクタ部11、21は携帯電話機2からの受電に使用すれば良いだけであるため、携帯電話機2のコネクタ部21の取り付け位置などの自由度が向上され、設計が容易になると共に、携帯電話機2側の外形状の改造負担を軽減することができる。他の効果は図1に示した第1の実施の形態と同様で同様の効果がある。尚、近距離通信部15、29は赤外線を用いた無線通信でも良く、同様の効果がある。

【0026】図4は、本発明の第3の実施の形態に係る照明装置の構成例を示したブロック図である。但し、図1に示した第1の実施の形態と同様の部分には同一符号を付し、適宜その説明を省略する。本例の照明装置1は、例えばBluetoothのような近距離通信部15を備えており、携帯電話機2とのライト用発光部14に関わる制御信号の送受はこの近距離通信部15を用いて行う構成になっている。また、本例は照明装置1内に電池等の電源部16を備えていて、この電源により照明装置1が動作するようになっている。従って、携帯電話機2から電源を受電するコネクタ部を持っておらず、当然、携帯電話機2側もコネクタ部を持っていない。このため、照明装置1を携帯電話機2に機械的に装着する何らかの機構があれば良い。上記構成以外の他の構成は図1に示した第2の実施の形態と同様である。また、携帯電話機2側も前記制御信号の通信のための近距離通信部29を装備すると共に、コネクタ部が省略されている。

【0027】次に本実施の形態の動作について説明する。照明装置1を携帯電話機2に装着した後、照明装置1の図示されない電源ボタンを押すと、電源部16から照明装置1の各部に電源が供給されて動作可能状態になる。その後、携帯電話機2の撮影部23により撮影を開始する際に、CPU22から近距離通信部29、近距離

無線回線、近距離通信部15を通して制御部12に撮影開始指令と共に、露光情報などが入力される。制御部12は撮影開始指令が入力されると、ライト用駆動部13を制御して、ライト用発光部14を適正露光が得られるような明るさで連続発光させて、撮影範囲を照明する。

【0028】本実施の形態によれば、照明装置1側に電池を内蔵しているため、照明装置1を携帯電話機2に装着する何らかの機構を設けるだけで、携帯電話機2の機械的な加工無しで専用の照明装置1を用いることができ、本例の照明装置1を各種の形状の携帯電話機2に対して容易に用いることができ、その汎用性を向上させることができる。他の効果は図3に示した第2の実施の形態と同様である。

【0029】図5は、本発明の第4の実施の形態に係る照明装置の構成例を示したブロック図である。但し、図1に示した第1の実施の形態と同様の部分には同一符号を付し、適宜その説明を省略する。照明装置1は携帯電話機2と着脱自在に接続するコネクタ部11、装置の発光動作等の個別制御及び装置全体の制御を司る制御部12、ライト用発光部14を駆動して発光させるライト用駆動部13、LED等を発光して周囲を照明するライト用発光部14、ストロボ用発光部18を駆動して発光させるストロボ用駆動部17、LED等によりストロボ発光するストロボ用発光部18を有している。尚、コネクタ部11は携帯電話機2のコネクタ部21と接続して、制御データの送受及び携帯電話機2の電源部から電源を受電する機能を有している。

【0030】携帯電話機2は照明装置1と着脱自在に接続するコネクタ部21、通信制御や撮影制御等の個別制御及び装置全体の制御を行うCPU22、動画や静止画を撮影する撮影部23、電話通信やデータ通信を行う通信部24、照明装置1を接続するためのインターフェース25、装置に動作電源を供給する電池等の電源部26を有している。

【0031】次に本実施の形態の動作について説明する。まず、携帯電話機2の撮影機能を用いて例えば動画撮影を行う場合、被写体の照度が足りない場合、照明装置1のコネクタ部11と携帯電話機2のコネクタ部21を接続して装着する。これにより、携帯電話機2の電源部26からコネクタ部21、コネクタ部11及び電源線50を通して照明装置1の各部に電源が供給されて動作可能状態になる。その後、携帯電話機2の撮影部23により動画撮影を開始する際に、CPU22からインターフェース25、コネクタ部21、コネクタ部11を通して制御部12に動画撮影開始指令と共に、露光情報などが入力される。制御部12は撮影開始指令が入力されると、ライト用駆動部13を制御して、ライト用発光部14を適正露光が得られるような明るさで連続発光させて、撮影範囲を照明する。

【0032】一方、携帯電話機2の撮影部23により静

止画を撮影する際に、照明装置1の制御部12には携帯電話機2側のCPU22から静止画撮影モード指令と共に、露光情報などが入力される。その後、制御部12はCPU22からのシャッター動作指令に連動して、ストロボ用駆動部17を制御して、ストロボ用発光部18を適正露光が得られるようにストロボ発光させる。

【0033】本実施の形態によれば、ひとつの照明装置1により携帯電話機2の撮影機能に対して、ライト照明とストロボ発光を行うことができ、その利便性を向上させることができる。他の効果は図1に示した第1の実施の形態と同様である。

【0034】尚、照明装置1側に電池等の電源部を搭載すれば、コネクタ部11、21は制御信号の送受のみの機能とすることができ、その分、携帯電話機2側に設けられるコネクタ部21の配置及び設計の自由度を向上させることができる。

【0035】図6は、本発明の第5の実施の形態に係る照明装置の構成例を示したブロック図である。但し、図5に示した第4の実施の形態と同様の部分には同一符号を付し、適宜その説明を省略する。本例の照明装置1は、例えばブルートゥースのような近距離通信部15を備えており、携帯電話機2とのライト用発光部14に関わる制御信号の送受はこの近距離通信部15を用いて行う構成になっている。従って、コネクタ部11は照明装置1を携帯電話機2に機械的に接続することと、携帯電話機2から電源を受電する機能のみを持つことになる。上記構成以外の他の構成は図5に示した第4の実施の形態と同様である。また、携帯電話機2側も前記制御信号の通信のための近距離通信部29を装備している。

【0036】本実施の形態によれば、携帯電話機2との制御信号の送受は近距離通信部15、29を介して行うため、コネクタ部11、21は携帯電話機2からの受電に使用すれば良いだけであるため、携帯電話機2のコネクタ部21の取り付け位置などの自由度が向上され、設計が容易になると共に、携帯電話機2側の外形状の改造負担を軽減することができる。他の効果は図5に示した第4の実施の形態と同様で同様の作用効果がある。尚、近距離通信部15、29は赤外線を用いた無線通信でも良く、同様の効果がある。

【0037】図7は、本発明の第6の実施の形態に係る照明装置の構成例を示したブロック図である。但し、図5に示した第4の実施の形態と同様の部分には同一符号を付し、適宜その説明を省略する。本例の照明装置1は、例えばブルートゥースのような近距離通信部15を備えており、携帯電話機2とのライト用発光部14に関わる制御信号の送受はこの近距離通信部15を用いて行う構成になっている。また、本例は照明装置1内に電池等の電源部16を備えていて、この電源により照明装置1が動作するようになっている。従って、携帯電話機2から電源を受電するコネクタ部を持っておらず、当然、

携帯電話機2側もコネクタ部を持っていない。このため、照明装置1を携帯電話機2に機械的に装着する何らかの機構があれば良い。上記構成以外の他の構成は図1に示した第2の実施の形態と同様である。また、携帯電話機2側も前記制御信号の通信のための近距離通信部29を装備すると共に、コネクタ部が省略されている。

【0038】本実施の形態によれば、照明装置1側に電池を内蔵しているため、照明装置1を携帯電話機2に装着する何らかの機構を設けるだけで、携帯電話機2の機械的な加工無しで専用の照明装置1を用いることができ、本例の照明装置1を各種の形状の携帯電話機2に対して容易に用いることができ、その汎用性を向上させることができる。他の効果は図6に示した第5の実施の形態と同様である。

【0039】尚、本発明は上記実施の形態に限定されることなく、その要旨を逸脱しない範囲において、具体的な構成、機能、作用、効果において、他の種々の形態によっても実施することができる。例えば上記実施の形態では、携帯端末として携帯電話機について説明したが、これに限ることはなく、撮影機能を有するPDA、携帯型パソコンなど各種の携帯端末に適用して同様の効果を得ることができる。

【0040】

【発明の効果】以上詳細に説明したように、請求項1、2の発明によれば、携帯端末に着脱自在に取り付けて動画撮影時の撮影範囲を照明することができる。請求項3、4の発明によれば、携帯端末には電源を照明装置に供給するための接続端子だけを取り付ければ良いため、携帯端末側の接続端子の配置や設計の自由度を向上させることができる。請求項5、6の発明によれば、携帯端末には制御信号を照明装置に入力するための接続端子だけを取り付ければ良いため、携帯端末側の接続端子の配置や設計の自由度を向上させることができる。請求項7の発明によれば、携帯端末には照明装置を装着する装着手段を取り付ければ良いため、携帯端末側の加工がほと*

* んどなく、設計の自由度を著しく向上させることができると共に、照明装置の汎用性を向上させることができる。請求項8の発明によれば、動画撮影と静止画撮影の両方に対応できるため、利便性を向上させることができる。

【図面の簡単な説明】

【図1】本発明の第1の実施の形態に係る照明装置の構成例を示したブロック図である。

【図2】図1に示した照明装置と携帯電話機の外觀例を示した斜視図である。

【図3】本発明の第2の実施の形態に係る照明装置の構成例を示したブロック図である。

【図4】本発明の第3の実施の形態に係る照明装置の構成例を示したブロック図である。

【図5】本発明の第4の実施の形態に係る照明装置の構成例を示したブロック図である。

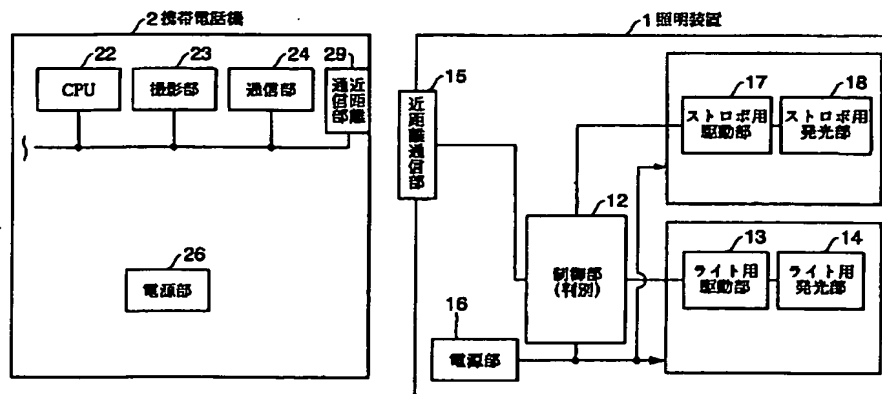
【図6】本発明の第5の実施の形態に係る照明装置の構成例を示したブロック図である。

【図7】本発明の第6の実施の形態に係る照明装置の構成例を示したブロック図である。

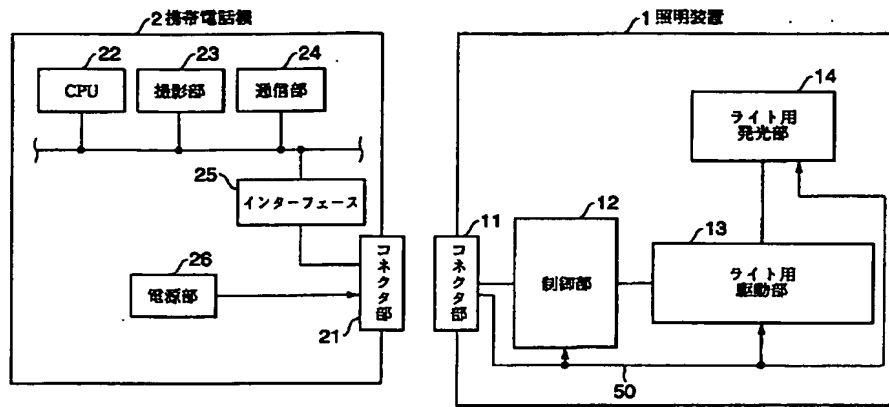
【符号の説明】

- 1 照明装置
- 2 携帯電話機
- 11、21 コネクタ部
- 12 制御部
- 13 ライト用駆動部
- 14 ライト用発光部
- 15、29 近距離通信部
- 16、26 電源部
- 17 ストロボ用駆動部
- 18 ストロボ用発光部
- 22 CPU
- 23 撮影部
- 24 通信部
- 25 インターフェース

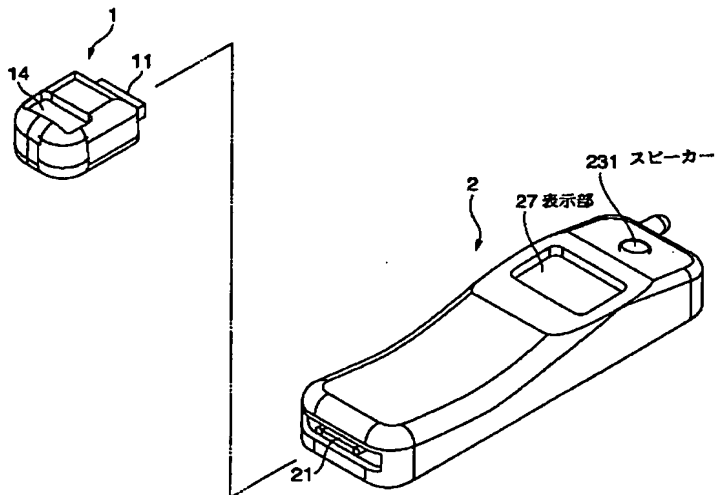
【図7】



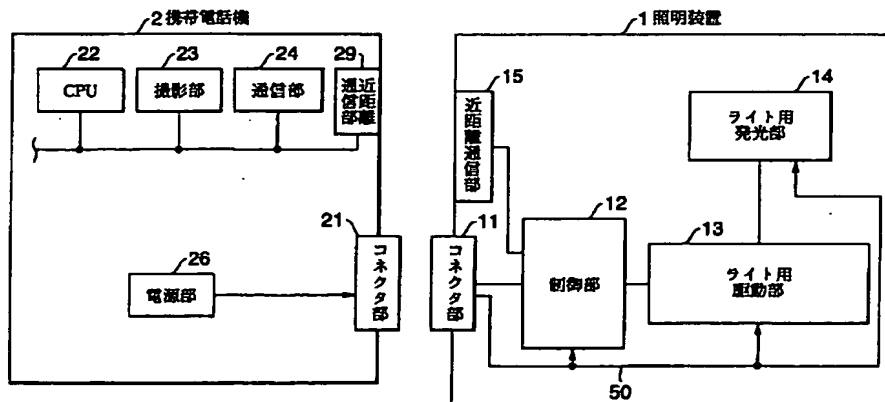
【図1】



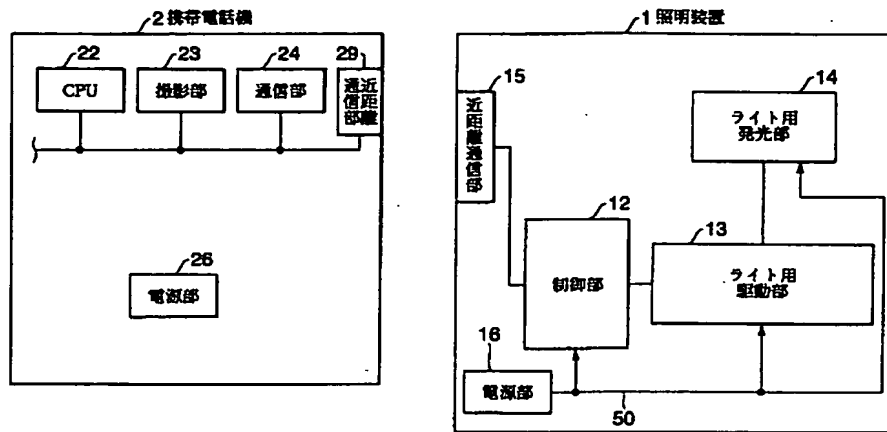
【図2】



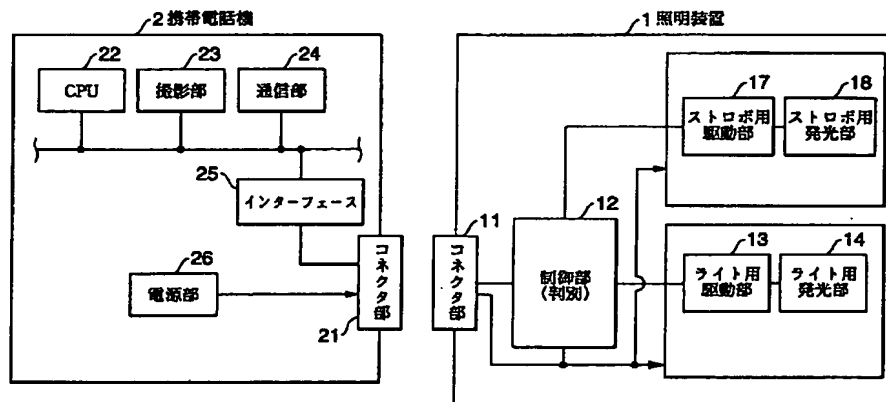
【図3】



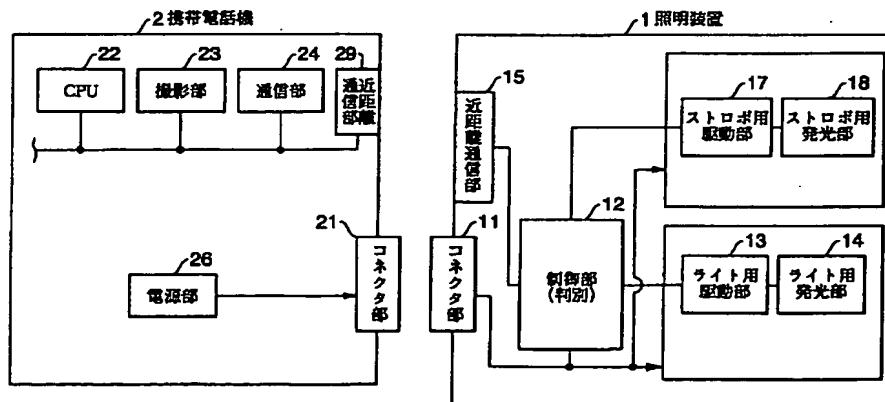
【図4】



【図5】



【図6】



フロントページの続き

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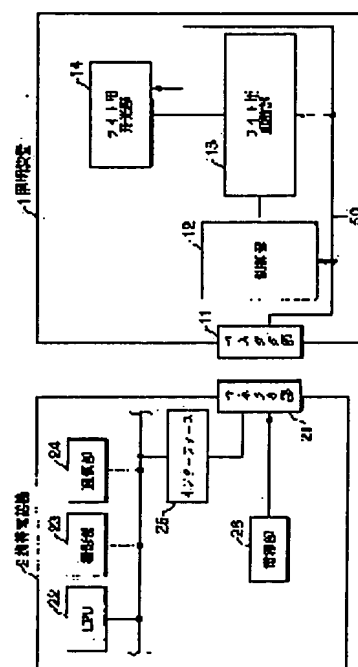
(22)Date of filing : 05.04.2002 (72)Inventor : MAMIYA TORU

(54) ILLUMINATOR

(57)Abstract:

PROBLEM TO BE SOLVED: To illuminate a photographic range in moving picture photography by detachably fitting an illuminator to a mobile terminal.

SOLUTION: When the illuminator is mounted on the mobile terminal by connecting the connector of the illuminator to the connector of the mobile terminal, the illuminator is supplied with the electric power from the mobile terminal to become operative. Then when a control signal for lighting is inputted from the mobile terminal, the illuminator emits light according to the control signal to illuminate the photographic range.



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CLAIMS

[Claim(s)]

[Claim 1] In the lighting system which illuminates photographic coverage at the time of the photography of a personal digital assistant which has a photography function A luminescence means to emit light and to illuminate said photographic coverage, and the control means which controls luminescence and a luminescence halt of said luminescence means, An input means to input the control signal for controlling said luminescence means from said personal digital assistant into said control means, A power receiving means to receive the power source for operating the lighting system concerned from said personal digital assistant Lighting system characterized by providing the wearing means for equipping said personal digital assistant with the lighting system concerned free [attachment and detachment].

[Claim 2] It is the lighting system according to claim 1 which said input means and said power receiving means are a connector, and power receiving of said power source is carried out by the lighting system concerned, and is further characterized by said both connectors serving as said wearing means while said control signal is inputted into said control unit through these connectors, when this connector connects with the connector by the side of said personal digital assistant.

[Claim 3] In the lighting system which illuminates photographic coverage at the time of the photography of a personal digital assistant which has a photography function A luminescence means to emit light and to illuminate said photographic coverage, and the control means which controls luminescence and a luminescence halt of said luminescence means, The short-distance means of communications which receives the control signal for controlling said luminescence means from said personal digital assistant, and is inputted into said control means, A power receiving means to receive the power source for operating the lighting system concerned from said personal digital assistant Lighting system characterized by providing the wearing means for equipping said personal digital assistant with the lighting system concerned free [attachment and detachment].

[Claim 4] It is the lighting system according to claim 3 which said power receiving means is a connector, and power receiving of said power source is carried out by the lighting system concerned through these connectors, and is further characterized by said both connectors serving as said wearing means when this connector connects with the connector by the side of said personal digital assistant.

[Claim 5] In the lighting system which illuminates photographic coverage at the time of the photography of a personal digital assistant which has a photography function A luminescence means to emit light and to illuminate said photographic coverage, and the control means which controls luminescence and a luminescence halt of said luminescence means, The lighting system characterized by providing an input means to input the control signal for controlling said luminescence means from said personal digital assistant into said control means, the power-source means for operating the lighting system concerned, and the wearing means for equipping said personal digital assistant with the lighting system concerned free [attachment and detachment].

[Claim 6] It is the lighting system according to claim 5 which said input means is a connector, and said control signal is inputted into said control unit through these connectors, and is characterized by said both connectors serving as said wearing means when this connector connects with the connector by the side of said personal digital assistant.

[Claim 7] In the lighting system which illuminates photographic coverage at the time of the

photography of a personal digital assistant which has a photography function A luminescence means to emit light and to illuminate said photographic coverage, and the control means which controls luminescence and a luminescence halt of said luminescence means, The short-distance means of communications which receives the control signal for controlling said luminescence means from said personal digital assistant, and is inputted into said control means, The lighting system characterized by providing the power-source means for operating the lighting system concerned, and the wearing means for equipping said personal digital assistant with the lighting system concerned free [attachment and detachment].

[Claim 8] claim 1 characterized by for said luminescence means to have the function which illuminates said photographic coverage as a light for animation photography, and the function which illuminates said photographic coverage as a stroboscope for still picture photography, and to carry out by said control means carving the control at the time of operating as the control at the time of said luminescence means operating as a light, and a stroboscope with the control signal from said personal digital assistant in connection with it thru/or 7 -- a lighting system given in either.

[Claim 9] claim 1 characterized by said luminescence means consisting of two or more light emitting devices thru/or 8 -- a lighting system given in either.

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the lighting system for photography used when starting the personal digital assistant which has a photography function, especially photoing an animation with a portable telephone.

[0002]

[Description of the Prior Art] Although there is a portable telephone etc. as a personal digital assistant with a photography function conventionally, usually does not have lighting fitting for photography of dedication. There are only some which had the stroboscope of dedication with this kind of portable telephone as an only example. Although a current portable telephone photos a still picture and this is transmitted, it is in the trend to which transmission speed becomes still quicker, and the photography function of an animation is incorporated and it will be in the situation that development of the model which can also transmit a dynamic image is also progressing from now on.

[0003]

[Problem(s) to be Solved by the Invention] It is the personal digital assistant which has the photography function of such an animation, and although the light which illuminates photographic coverage is required when photoing the location where an illuminance is insufficient, the present condition is that there is nothing that now equipped the light only for personal digital assistants.

[0004] Made in order that this invention might solve the conventional technical problem like ****, the purpose is offering the lighting system which can attach in a personal digital assistant free [attachment and detachment], and can carry out continuation lighting of the photographic coverage.

[0005]

[Means for Solving the Problem] In the lighting system which illuminates photographic coverage at the time of the photography of a personal digital assistant whose invention of claim 1 which solves the technical problem of this invention has a photography function A luminescence means to emit light and to illuminate said photographic coverage, and the control means which controls luminescence and a luminescence halt of said luminescence means, An input means to input the control signal for controlling said luminescence means from said personal digital assistant into said control means, It is characterized by providing a power receiving means to receive the power source for operating the lighting system concerned from said personal digital assistant, and the wearing means for equipping said personal digital assistant with the lighting system concerned free [attachment and detachment].

[0006] If according to the above-mentioned invention a power source is received from said personal digital assistant, and it will be in the condition which can be operated, if said personal digital assistant is equipped with the lighting system concerned, and a control signal is inputted from said personal digital assistant after that, based on this control signal, light will be emitted in said luminescence means, and said photographic coverage will be illuminated continuously.

[0007] When said input means and said power receiving means are a connector and this connector connects them to the connector by the side of said personal digital assistant in said claim 1, while, as for invention of claim 2, said control signal is inputted into said control unit through these

connectors, power receiving of said power source is carried out by the lighting system concerned, and it is further characterized by said both connectors serving as said wearing means.

[0008] In the lighting system which illuminates photographic coverage at the time of the photography of a personal digital assistant whose invention of claim 3 has a photography function A luminescence means to emit light and to illuminate said photographic coverage, and the control means which controls luminescence and a luminescence halt of said luminescence means, The short-distance means of communications which receives the control signal for controlling said luminescence means from said personal digital assistant, and is inputted into said control means, It is characterized by providing a power receiving means to receive the power source for operating the lighting system concerned from said personal digital assistant, and the wearing means for equipping said personal digital assistant with the lighting system concerned free [attachment and detachment].

[0009] According to the above-mentioned invention, it receives by short-distance radio like Bluetooth from a portable telephone, and the control signal which controls luminescence and a luminescence halt of a luminescence means is inputted in a lighting system.

[0010] When invention of claim 4 is a connector and this connector connects said power receiving means to the connector by the side of said personal digital assistant for it in said claim 3, power receiving of said power source is carried out by the lighting system concerned through these connectors, and it is further characterized by said both connectors serving as said wearing means.

[0011] In the lighting system which illuminates photographic coverage at the time of the photography of a personal digital assistant whose invention of claim 5 has a photography function A luminescence means to emit light and to illuminate said photographic coverage, and the control means which controls luminescence and a luminescence halt of said luminescence means, It is characterized by providing an input means to input the control signal for controlling said luminescence means from said personal digital assistant into said control means, the power-source means for operating the lighting system concerned, and the wearing means for equipping said personal digital assistant with the lighting system concerned free [attachment and detachment].

[0012] When said input means is a connector and this connector connects invention of claim 6 to the connector by the side of said personal digital assistant in said claim 5, said control signal is inputted into said control unit through these connectors, and it is characterized by said both connectors serving as said wearing means.

[0013] In the lighting system which illuminates photographic coverage at the time of the photography of a personal digital assistant whose invention of claim 7 has a photography function A luminescence means to emit light and to illuminate said photographic coverage, and the control means which controls luminescence and a luminescence halt of said luminescence means, It is characterized by providing the short-distance means of communications which receives the control signal for controlling said luminescence means from said personal digital assistant, and is inputted into said control means, the power-source means for operating the lighting system concerned, and the wearing means for equipping said personal digital assistant with the lighting system concerned free [attachment and detachment].

[0014] According to the above-mentioned invention, the control signal which controls luminescence and a luminescence halt of a luminescence means is received by short-distance radio like Bluetooth from a portable telephone, and a power source is supplied from what is built in self-equipment.

[0015] In either invention of claim 8 -- said claim 1 thru/or 7 -- said luminescence means It has the function which illuminates said photographic coverage as a light for animation photography, and the function which illuminates said photographic coverage as a stroboscope for still picture photography. In connection with it, said control means is characterized by carving the control at the time of operating as the control at the time of said luminescence means operating as a light, and a stroboscope with the control signal from said personal digital assistant, and performing it.

[0016] invention of claim 9 -- said claim 1 thru/or 8 -- in either, it is characterized by said luminescence means consisting of two or more light emitting devices.

[0017]

[Embodiment of the Invention] Hereafter, the gestalt of operation of this invention is explained based on a drawing. Drawing 1 is the block diagram having shown the example of a configuration of

the lighting system concerning the gestalt of operation of the 1st of this invention. The lighting system 1 has the light-emitting part 14 for lights which emits light in the control section 12 which manages individual control, such as luminescence actuation of the connector area 11 and equipment which are connected with a portable telephone 2 free [attachment and detachment], and control of the whole equipment, the mechanical component 13 for lights which the light-emitting part 14 for lights is driven [mechanical component], and makes it emit light, two or more LED (light emitting device), etc., and illuminates a perimeter. In addition, a connector area 11 is connected with the connector area 21 of a portable telephone 2, and it has the function which receives a power source from transmission and reception of control data, and the power supply section of a portable telephone 2.

[0018] The portable telephone 2 has the power supply sections 26, such as a cell which supplies a power source of operation to the interface 25 for connecting CPU22 which performs individual control, such as the connector area 21 and communications control which are connected with a lighting system 1 free [attachment and detachment], and photography control, and control of the whole equipment, the photography section 23 which photos an animation and a still picture, the communications department 24 which performs telephone communication and data communication, and a lighting system 1, and equipment.

[0019] Drawing 2 is the above-mentioned perspective view of a lighting system 1 and a portable telephone 2. The connector area 11 of a lighting system 1 is connected to the connector area 21 arranged at the power supply terminal section of a portable telephone 2, and a portable telephone 2 is equipped with a lighting system 1. 231 of a portable telephone 2 is a loudspeaker for receivers, and 27 is displays, such as LCD. In addition, 360 degrees, the head part with the light-emitting part 14 for lights of a lighting system 1 shall be rotated, and shall turn the light-emitting part 14 for lights in the direction of arbitration.

[0020] Next, actuation of the gestalt of this operation is explained. First, by the case where animation photography is performed using the photography function of a portable telephone 2, when the illuminance of a photographic subject is insufficient, it connects and equips with the connector area 11 of a lighting system 1, and the connector area 21 of a portable telephone 2. Thereby, a power source is supplied to each part of a lighting system 1 through a connector area 21, a connector area 11, and the power-source line 50 from the power supply section 26 of a portable telephone 2, and it will be in the condition which can be operated. Then, in case photography is started by the photography section 23 of a portable telephone 2, exposure information etc. is inputted into a control section 12 with a photography initiation command through an interface 25, a connector area 21, and a connector area 11 from CPU22. If a photography initiation command is inputted, a control section 12 will control the mechanical component 13 for lights, will make the light-emitting part 14 for lights emit light with brightness from which proper exposure is obtained, and will carry out continuation lighting of the photographic coverage.

[0021] According to the gestalt of this operation, a portable telephone 2 can be equipped free [attachment and detachment], and supply of a power source is received from a portable telephone 2 side, and the photography function of a portable telephone 2 can be interlocked with, and it can suppose that it is lightweight small according to the magnitude of a portable telephone 2 for the configuration which carries out continuation luminescence, and can be used to photography of the dynamic image by the portable telephone 2 in a dark location very conveniently. Moreover, since [small] it is lightweight, it cannot become obstructive, and it can carry together with a portable telephone 2, can carry out, and can be easily used as a lighting light at the time of photography of a dynamic image. Furthermore, by using white LED as a light-emitting part 14 for lights, endurance can be raised, and it can consider as power saving, and prolonged photography can be performed.

[0022] In addition, if power supply sections, such as a cell, are carried in a lighting-system 1 side, connector areas 11 and 21 can be considered as the function of a control signal of only transmission and reception, and can raise the degree of freedom of arrangement of the connector area 21 prepared in a part and portable telephone 2 side, and a design.

[0023] Drawing 3 is the block diagram having shown the example of a configuration of the lighting system concerning the gestalt of operation of the 2nd of this invention. However, the same sign is given to the same part as the gestalt of the 1st operation shown in drawing 1, and the explanation is

omitted suitably. It has the short-distance communications department 15 like Bluetooth, and the lighting system 1 of this example has the composition of performing transmission and reception with the portable telephone 2 of the control signal in connection with the light-emitting part 14 for lights using this short-distance communications department 15. Therefore, a connector area 11 will have only connecting a lighting system 1 to a portable telephone 2 mechanically, and the function which receives a power source from a portable telephone 2. Other configurations other than the above-mentioned configuration are the same as that of the gestalt of the 1st operation shown in drawing 1. Moreover, the portable telephone 2 side has also equipped the short-distance communications department 29 for the communication link of said control signal.

[0024] Next, actuation of the gestalt of this operation is explained. It connects and equips with the connector area 11 of a lighting system 1, and the connector area 21 of a portable telephone 2. Thereby, a power source is supplied to each part of a lighting system 1 through a connector area 21, a connector area 11, and the power-source line 50 from the power supply section 26 of a portable telephone 2, and it will be in the condition which can be operated. Then, in case photography is started by the photography section 23 of a portable telephone 2, exposure information etc. is inputted into a control section 12 with a photography initiation command through the short-distance communications department 29, a short-distance wireless circuit, and the short-distance communications department 15 from CPU22. If a photography initiation command is inputted, a control section 12 will control the mechanical component 13 for lights, will carry out continuation luminescence of the light-emitting part 14 for lights with brightness from which proper exposure is obtained, and will illuminate photographic coverage.

[0025] According to the gestalt of this operation, since transmission and reception of a control signal with a portable telephone 2 are performed through the short-distance communications departments 15 and 29, connector areas 11 and 21 can mitigate the reconstruction burden of the shape of an appearance by the side of a portable telephone 2 while the degree of freedom of the installation location of the connector area 21 of a portable telephone 2 etc. improves and a design becomes easy, in order for what is necessary to be just to only use it for power receiving from a portable telephone 2. The effectiveness that it is the same as that of the gestalt of the 1st operation and same shown in drawing 1 has other effectiveness. In addition, the radio which used infrared radiation is satisfactory for the short-distance communications departments 15 and 29, and they have the same effectiveness.

[0026] Drawing 4 is the block diagram having shown the example of a configuration of the lighting system concerning the gestalt of operation of the 3rd of this invention. However, the same sign is given to the same part as the gestalt of the 1st operation shown in drawing 1, and the explanation is omitted suitably. The lighting system 1 of this example is equipped with the short-distance communications department 15 like Bluetooth, and has the composition of performing transmission and reception of the control signal in connection with the light-emitting part 14 for lights with a portable telephone 2 using this short-distance communications department 15. Moreover, this example is equipped with the power supply sections 16, such as a cell, in the lighting system 1, and a lighting system 1 operates according to this power source. Therefore, it does not have the connector area which receives a power source from a portable telephone 2, and, naturally a portable telephone 2 side does not have a connector area, either. For this reason, there should just be a certain device in which a portable telephone 2 is mechanically equipped with a lighting system 1. Other configurations other than the above-mentioned configuration are the same as that of the gestalt of the 2nd operation shown in drawing 1. Moreover, the connector area is omitted while a portable telephone 2 side also equips the short-distance communications department 29 for the communication link of said control signal.

[0027] Next, actuation of the gestalt of this operation is explained. If the power button by which a lighting system 1 is not illustrated is pushed after equipping a portable telephone 2 with a lighting system 1, a power source is supplied to each part of a lighting system 1 from a power supply section 16, and it will be in the condition which can be operated. Then, in case photography is started by the photography section 23 of a portable telephone 2, exposure information etc. is inputted into a control section 12 with a photography initiation command through the short-distance communications department 29, a short-distance wireless circuit, and the short-distance communications department 15 from CPU22. If a photography initiation command is inputted, a control section 12 will control

the mechanical component 13 for lights, will carry out continuation luminescence of the light-emitting part 14 for lights with brightness from which proper exposure is obtained, and will illuminate photographic coverage.

[0028] According to the gestalt of this operation, since the cell is built in the lighting-system 1 side, the lighting system 1 of dedication can be used without mechanical processing of a portable telephone 2 only by establishing a certain device in which a portable telephone 2 is equipped with a lighting system 1, the lighting system 1 of this example can be easily used to the portable telephone 2 of various kinds of configurations, and the versatility can be raised. Other effectiveness is the same as the gestalt of the 2nd operation shown in drawing 3.

[0029] Drawing 5 is the block diagram having shown the example of a configuration of the lighting system concerning the gestalt of operation of the 4th of this invention. However, the same sign is given to the same part as the gestalt of the 1st operation shown in drawing 1, and the explanation is omitted suitably. A lighting system 1 has the light-emitting part 18 for stroboscopes which carries out stroboscope luminescence by the mechanical component 17 for stroboscopes which the light-emitting part 14 for lights and the light-emitting part 18 for stroboscopes which emit light in the mechanical component 13 for lights, the LED, etc. which the control section 12 which manages individual control, such as luminescence actuation of the connector area 11 and the equipment connected with a portable telephone 2 free [attachment and detachment, and control of the whole equipment, and the light-emitting part 14 for lights drive / LED /, and make them emit light, and illuminate a perimeter drive / mechanical component /, and makes them emit light, LED etc. In addition, a connector area 11 is connected with the connector area 21 of a portable telephone 2, and it has the function which receives a power source from transmission and reception of control data, and the power supply section of a portable telephone 2.

[0030] The portable telephone 2 has the power supply sections 26, such as a cell which supplies a power source of operation to the interface 25 for connecting CPU22 which performs individual control, such as the connector area 21 and communications control which are connected with a lighting system 1 free [attachment and detachment], and photography control, and control of the whole equipment, the photography section 23 which photos an animation and a still picture, the communications department 24 which performs telephone communication and data communication, and a lighting system 1, and equipment.

[0031] Next, actuation of the gestalt of this operation is explained. First, when performing animation photography, using the photography function of a portable telephone 2, and the illuminance of a photographic subject is insufficient, it connects and equips with the connector area 11 of a lighting system 1, and the connector area 21 of a portable telephone 2. Thereby, a power source is supplied to each part of a lighting system 1 through a connector area 21, a connector area 11, and the power-source line 50 from the power supply section 26 of a portable telephone 2, and it will be in the condition which can be operated. Then, in case animation photography is started by the photography section 23 of a portable telephone 2, exposure information etc. is inputted into a control section 12 with an animation photography initiation command through an interface 25, a connector area 21, and a connector area 11 from CPU22. If a photography initiation command is inputted, a control section 12 will control the mechanical component 13 for lights, will carry out continuation luminescence of the light-emitting part 14 for lights with brightness from which proper exposure is obtained, and will illuminate photographic coverage.

[0032] On the other hand, in case a still picture is photoed by the photography section 23 of a portable telephone 2, exposure information etc. is inputted into the control section 12 of a lighting system 1 with a still picture photography mode command from CPU22 by the side of a portable telephone 2. Then, a control section 12 is interlocked with a shutter operating command from CPU22, controls the mechanical component 17 for stroboscopes, and it carries out stroboscope luminescence of the light-emitting part 18 for stroboscopes so that proper exposure may be obtained.

[0033] According to the gestalt of this operation, one lighting system 1 can perform light lighting and stroboscope luminescence to the photography function of a portable telephone 2, and the convenience can be raised. Other effectiveness is the same as the gestalt of the 1st operation shown in drawing 1.

[0034] In addition, if power supply sections, such as a cell, are carried in a lighting-system 1 side, connector areas 11 and 21 can be considered as the function of a control signal of only transmission and reception, and can raise the degree of freedom of arrangement of the connector area 21 prepared in a part and portable telephone 2 side, and a design.

[0035] Drawing 6 is the block diagram having shown the example of a configuration of the lighting system concerning the gestalt of operation of the 5th of this invention. However, the same sign is given to the same part as the gestalt of the 4th operation shown in drawing 5, and the explanation is omitted suitably. The lighting system 1 of this example is equipped with the short-distance communications department 15 like Bluetooth, and has the composition of performing transmission and reception of the control signal in connection with the light-emitting part 14 for lights with a portable telephone 2 using this short-distance communications department 15. Therefore, a connector area 11 will have only connecting a lighting system 1 to a portable telephone 2 mechanically, and the function which receives a power source from a portable telephone 2. Other configurations other than the above-mentioned configuration are the same as that of the gestalt of the 4th operation shown in drawing 5. Moreover, the portable telephone 2 side has also equipped the short-distance communications department 29 for the communication link of said control signal.

[0036] According to the gestalt of this operation, since transmission and reception of a control signal with a portable telephone 2 are performed through the short-distance communications departments 15 and 29, connector areas 11 and 21 can mitigate the reconstruction burden of the shape of an appearance by the side of a portable telephone 2 while the degree of freedom of the installation location of the connector area 21 of a portable telephone 2 etc. improves and a design becomes easy, in order for what is necessary to be just to only use it for power receiving from a portable telephone 2. The operation effectiveness that it is the same as that of the gestalt of the 4th operation and same shown in drawing 5 has other effectiveness. In addition, the radio which used infrared radiation is satisfactory for the short-distance communications departments 15 and 29, and they have the same effectiveness.

[0037] Drawing 7 is the block diagram having shown the example of a configuration of the lighting system concerning the gestalt of operation of the 6th of this invention. However, the same sign is given to the same part as the gestalt of the 4th operation shown in drawing 5, and the explanation is omitted suitably. The lighting system 1 of this example is equipped with the short-distance communications department 15 like Bluetooth, and has the composition of performing transmission and reception of the control signal in connection with the light-emitting part 14 for lights with a portable telephone 2 using this short-distance communications department 15. Moreover, this example is equipped with the power supply sections 16, such as a cell, in the lighting system 1, and a lighting system 1 operates according to this power source. Therefore, it does not have the connector area which receives a power source from a portable telephone 2, and, naturally a portable telephone 2 side does not have a connector area, either. For this reason, there should just be a certain device in which a portable telephone 2 is mechanically equipped with a lighting system 1. Other configurations other than the above-mentioned configuration are the same as that of the gestalt of the 2nd operation shown in drawing 1. Moreover, the connector area is omitted while a portable telephone 2 side also equips the short-distance communications department 29 for the communication link of said control signal.

[0038] According to the gestalt of this operation, since the cell is built in the lighting-system 1 side, the lighting system 1 of dedication can be used without mechanical processing of a portable telephone 2 only by establishing a certain device in which a portable telephone 2 is equipped with a lighting system 1, the lighting system 1 of this example can be easily used to the portable telephone 2 of various kinds of configurations, and the versatility can be raised. Other effectiveness is the same as the gestalt of the 5th operation shown in drawing 6.

[0039] In addition, this invention can be carried out according to other various gestalten in a concrete configuration, a function, an operation, and effectiveness in the range which does not deviate from the summary, without being limited to the gestalt of the above-mentioned implementation. For example, with the gestalt of the above-mentioned implementation, although the portable telephone was explained as a personal digital assistant, it can apply to various kinds of personal digital assistants, such as PDA, a portable personal computer, etc. which do not restrict to this and have a

photography function, and the same effectiveness can be acquired.

[0040]

[Effect of the Invention] As explained to the detail above, according to invention of claims 1 and 2, it can attach in a personal digital assistant free [attachment and detachment], and the photographic coverage at the time of dynamic-image photography can be illuminated. Since what is necessary is to attach only the connection terminal for supplying a power source to a lighting system in a personal digital assistant according to invention of claims 3 and 4, the degree of freedom of arrangement of the connection terminal by the side of a personal digital assistant or a design can be raised. Since what is necessary is to attach only the connection terminal for inputting a control signal into a lighting system in a personal digital assistant according to invention of claims 5 and 6, the degree of freedom of arrangement of the connection terminal by the side of a personal digital assistant or a design can be raised. Since what is necessary is just to attach a wearing means to equip a personal digital assistant with a lighting system according to invention of claim 7, while there is almost no processing by the side of a personal digital assistant and being able to raise the degree of freedom of a design remarkably, the versatility of a lighting system can be raised. According to invention of claim 8, since it can respond to both animation photography and still picture photography, convenience can be raised.

[Translation done.]

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the block diagram having shown the example of a configuration of the lighting system concerning the gestalt of operation of the 1st of this invention.

[Drawing 2] It is the perspective view having shown the example of an appearance of a lighting system and a portable telephone shown in drawing 1 .

[Drawing 3] It is the block diagram having shown the example of a configuration of the lighting system concerning the gestalt of operation of the 2nd of this invention.

[Drawing 4] It is the block diagram having shown the example of a configuration of the lighting system concerning the gestalt of operation of the 3rd of this invention.

[Drawing 5] It is the block diagram having shown the example of a configuration of the lighting system concerning the gestalt of operation of the 4th of this invention.

[Drawing 6] It is the block diagram having shown the example of a configuration of the lighting system concerning the gestalt of operation of the 5th of this invention.

[Drawing 7] It is the block diagram having shown the example of a configuration of the lighting system concerning the gestalt of operation of the 6th of this invention.

[Description of Notations]

- 1 Lighting System
- 2 Portable Telephone
- 11 21 Connector area
- 12 Control Section
- 13 Mechanical Component for Lights
- 14 Light-emitting Part for Lights
- 15 29 The short-distance communications department
- 16 26 Power supply section
- 17 Mechanical Component for Stroboscopes
- 18 Light-emitting Part for Stroboscopes
- 22 CPU
- 23 Photography Section
- 24 Communications Department
- 25 Interface

[Translation done.]

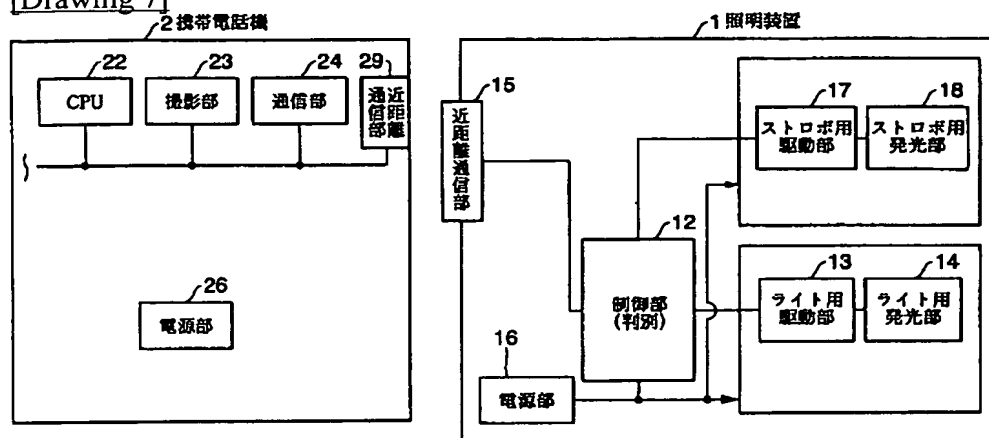
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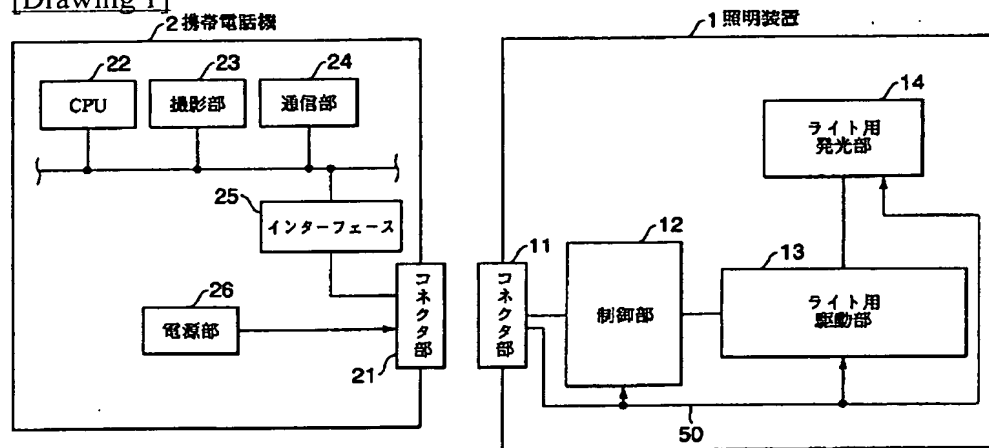
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DRAWINGS

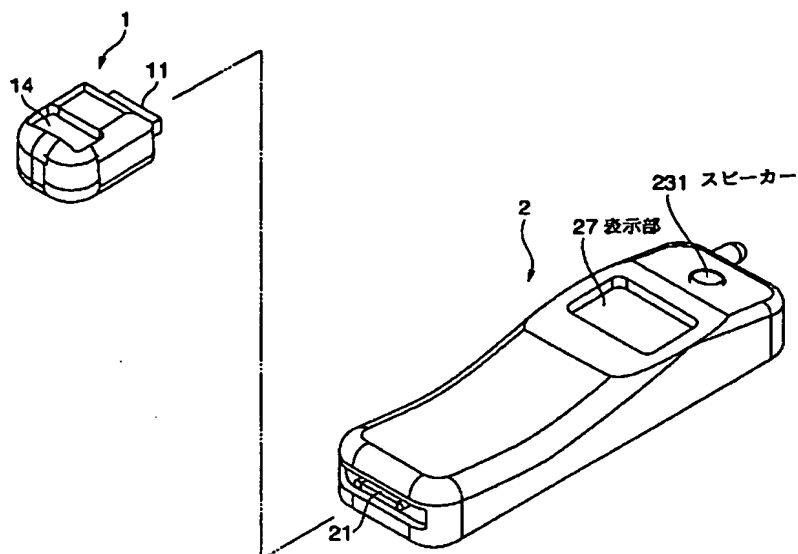
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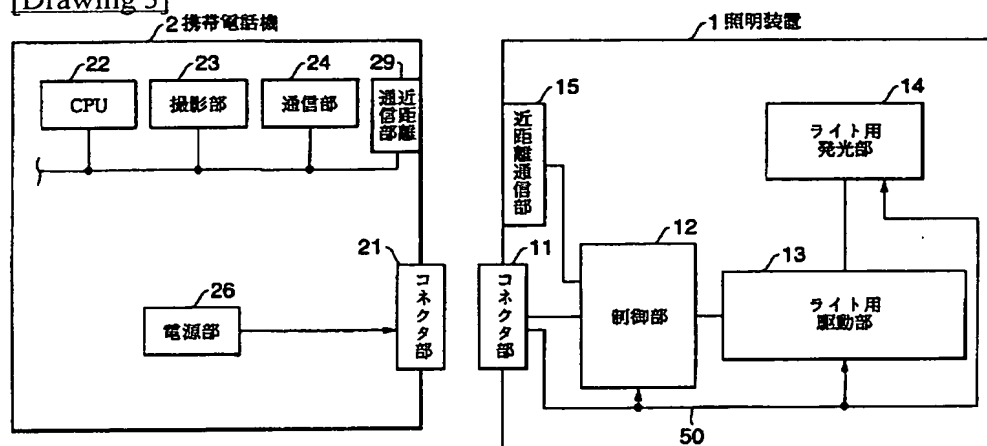
[Drawing 1]



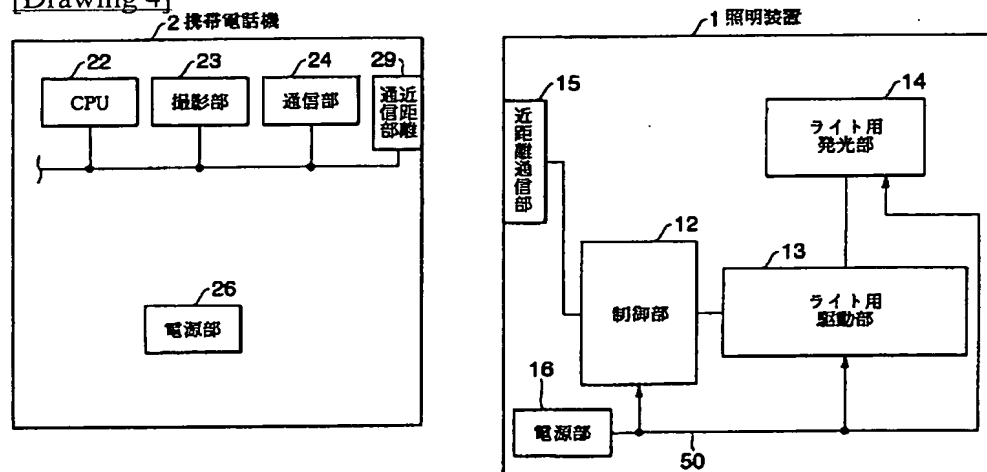
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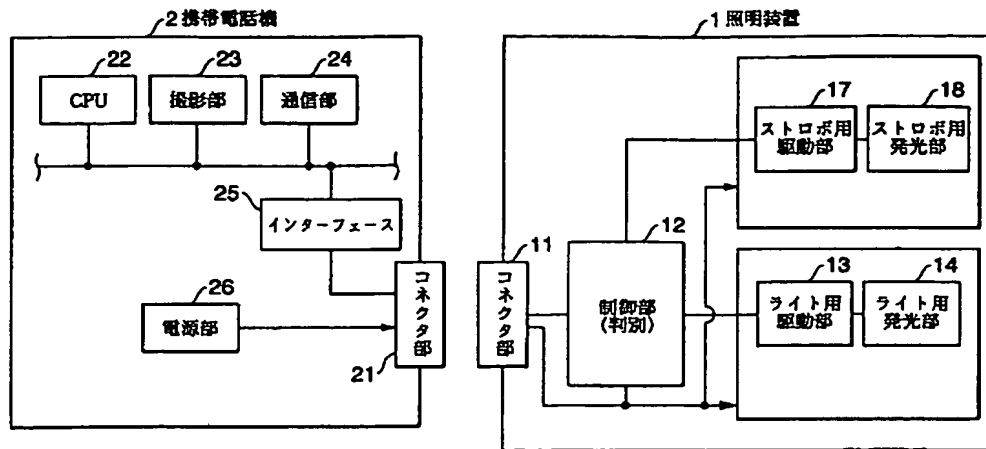
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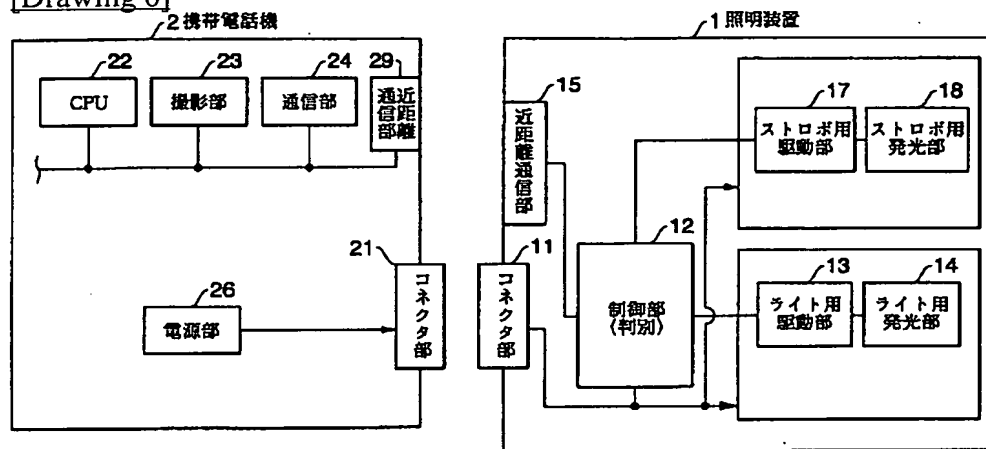
[Drawing 4]



[Drawing 5]



[Drawing 6]



[Translation done.]